Preliminary and Short Report

PAGANO-LEVIN MEDIUM: READINGS WITH *CANDIDA ALBICANS* ORGANISMS AT INCUBATOR AND ROOM TEMPERATURE*

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Recently, a solid nutrient agar, the Pagano-Levin Medium (1, 2) has been developed which is intended for use in the selective, rapid, and convenient differentiation of colonies of *Candida albicans* from those of other Candida species and saprophytic yeasts. This differentiation is made by visual inspection primarily of the color of the colony growing on the medium after from two to three days of incubation at room temperature. Those colonies appearing cream colored or very faintly pink are tentatively identified as *Candida albicans*. Most species of Candida other than *Candida albicans* and most other saprophytic and pathogenic yeasts grow out as darker pink to dark red colonies. Although colonies of *C. krusei* appear white in color also, these colonies can be differentiated since they are flat, dry, and non-glistening as opposed to the smooth, creamy, glistening texture of the *Candida albicans* colony.

The nutrient composition of the Pagano-Levin Medium is very slightly modified from (fortified) but in all respects essentially similar to Sabouraud's medium. The Pagano-Levin Medium also includes a tetrazolium compound as a color indicator system and a relatively broad spectrum antibiotic, neomycin, not present in Sabouraud's medium (1).

This investigation was undertaken to compare the color of *Candida albicans* colonies observed on this medium at various time intervals following incubation at 37° C and at room temperature. We were concerned primarily with whether it would be advisable, preferable, or possible to hasten the process of colorimetric differentiation by incubation.

METHODS

Accordingly, 43 strains of *Candida albicans* organisms were studied for colorimetric characteristics following 24, 31, 48, and 55 hours of incubation at room temperature and at 37° C.

A specially prepared Color Shade Guide (2), ranging from white to red (in 12 levels of color intensity) and leading off in arithmetic proportions from these basic colors to the yellows and blues, was used to match the color of the colony as closely as possible at each time interval of study.

Each of the 43 strains of *Candida albicans* organisms was inoculated into Sabouraud's glucose broth. This broth culture was incubated for 48 hours, at which time two slants of Pagano-Levin Medium were inoculated using a loopful transfer to the surface. One of these slants was held at room temperature, while the duplicate culture tube was incubated at 37° C. At the varying time intervals specified above (24, 31, 48, and 55 hours), all cultures were individually read for color characteristics.

RESULTS

Examination of the profile of readings obtained indicates that at the end of 24 hours, the level of color intensity in the incubated specimens was considerably greater than that of the room temperature specimens—a consequence probably of a further stage of colony growth.

On the basis of the assigning of "weighted" grades to the readings, it was concluded that the color ultimately obtained in a 55-hour room temperature specimen has already been reached after 24 hours of incubation at 37° C and that this color level in the 37° C incubated organisms does not significantly increase over the period of time from 24 to 55 hours. Hence, it seems that the color intensity characteristics of *Candida albicans* organisms at 24 hours at 37° C can be roughly equated with those at 55 hours of room temperature incubation.

It remains to be documented whether the growth characteristics of other yeasts and fungi parallel these color intensity findings. Should this be so, then the usefulness of the Pagano-Levin Medium might well be improved by decreasing to 24+ hours the time required for the reading of cultures.

Summary

The comparative color characteristics of 43 strains of *Candida albicans* organisms growing on Pagano-Levin Medium under incubator conditions (37° C) was found at the end of 24 hours to be similar to that after 55 hours of incubation at

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